



Mid-Term Evaluation

Nicaragua Child Survival VIII Project

World Relief Corporation

Conducted by:

World Relief Staff

Albetto Araica, M.D.
Nancy Cano, M.D.
Muriel Elmer, M.S.N., Ph.D.
Aminta Ferrufino, B.A.
Zorayda Gomez, M.D.
Corina Rodriguez, B.A.

Consultant and Team Leader

La Rue K. Seims, M.A., M.P.H.

Development Associates

Ilka Esquivel, Ph.D.

August 1994

Managua, Nicaragua

Acronyms

ADRA	-	Adventist Relief and Development Agency
ALRI	-	Acute Lower Respiratory Infection
ARI		Acute Respiratory Infection
BCG		Bacillus Calmette-Guerin
CDC		Centers for Disease Control
CHC		Community Health Committee
CHW	-	Community health worker
CIPRES	-	Centro de Investigacion y Promotion para el Desarrollo Rural y Social
DIP	-	Detailed Implementation Plan
EPI	-	Expanded Program on Immunization
FHA/PVC	-	Bureau for Food and Humanitarian Assistance/Office of Private and Voluntary Cooperation
GDP	-	Gross Domestic Product
HIS	-	Health information system
INSSBI	-	Instituto Nicaraguense de Seguridad Social y Bienestar
GTZ	-	Deutsche Gesellschaft Fur Technische Zusammenarbeit
JCOPS	-	Juntas Comunitarias de Obras y Progreso
KPC	-	Knowledge, practice, coverage
MINSA	-	Ministry of Health/Nicaragua
NGO	-	Non-Governmental Organization
ORS	-	Oral rehydration salts/oral rehydration solution
ORT	-	Oral rehydration therapy
PROFAMILIA	-	Asociacion Pro-Bienestar de la Familia Nicaraguense
PVO	-	Private Voluntary Organization
SILAIS	-	Sistemas Locales de Atencion Integral a la Salud
USAID	-	United States Agency for International Development
WRC	-	World Relief Corporation
WRN		World Relief Nicaragua

*corrected
table of content*

Table of Contents

1.	Executive Summary	1
2.	Introduction	4
2.1	Background	4
2.2	Team Composition	5
2.3	Methodology	6
3.	Accomplishments and Progress toward Goals	8
4.	Relevance to Child Survival Problems	13
4.1	Major Causes of Morbidity/Mortality	13
4.2	Interventions and Health Promotion Activities Initiated	13
4.3	Appropriate Mix, Focus, and Prioritization of Interventions	14
5.	Effectiveness in Reaching High-Risk Groups	15
6.	Relevance to Development	17
7.	Design and Implementation	19
7.1	Design	20
7.2	Management and Use of Data	23
7.3	Community Education and Social Promotion	26
7.3.1	Balance of Project Activities	26
7.3.2	Link between Health Education and Services	26
7.3.3	Development of Health Education Messages	27
7.3.4	Training Methodology	27
7.4	Human Resources for Child Survival	29
7.5	Supplies and Materials for Local Staff'	30
7.6	Quality	32
7.7	Supervision and Monitoring	33
7.8	Use of Central Funding	34

7.9	Use of Technical Support	34
7.10	Assessment of Counterpart Relationships	36
7.11	Referral Relationships	38
7.12	PVO/NGO Networking	39
7.13	Budget Management	39
8.	Sustainability	40
8.1	Coordination with MINSA and Local Institutions	40
8.2	Incentives for Brigadistas	41
8.3	Community Involvement	42
9.	Recurrent Costs and Cost Recovery Mechanisms	42
10.	Recommendations of Interviewees to Improve the Project . .	43
11.	Key Findings and Recommendations of the Evaluation Team	45
12.	Lessons Learned	48

Appendix A: Scope of Work

Appendix B: List of Documents Reviewed

Appendix C: Interview and Focus Group Guides

Appendix D: Schedule

Appendix E: List of Persons Interviewed

Appendix F: Conclusions of Focus Groups

Appendix G: Budget, Budget Variance Report, and Pipeline Analysis

1. Executive Summary

World Relief Corporation (WRC) has been managing the Nicaragua Child Survival VIII Project since September 30, 1992. The project is being implemented in three areas:

- Managua, District 6 (Silvia Ferrufino and Villa Venezuela Municipalities);
- Tipitapa, a primarily urban suburb of Managua; and,
- Sparsely-populated Rio San Juan.

From July 19 to August 5, 1994, a Mid-Term Evaluation of the Nicaragua Child Survival VIII Project took place to assess the accomplishments and management of the project thus far and to make recommendations to improve the project in its remaining year. A total of 104 persons were interviewed, and 87 persons participated in focus groups.

The project largely provides training and health education for the following package of child survival interventions: immunization, diarrhea¹ disease control, nutritional improvement, Vitamin A, growth monitoring, maternal health (including birth spacing), and acute lower respiratory infections (ALRI) and pneumonia. A proposed malaria intervention has not yet been implemented in any project area.

The original project goal was to train 39 promoters. A total of 36 promoters are currently on staff and have been trained in most interventions. Of the 468 volunteer brigadistas (community health workers - **CHWs**) originally proposed for the project, a total of 273 supervised by the project have been trained in at least one intervention. If one were to include, however, volunteers working for local **NGOs**, and MINSA volunteers working in base houses, all of whom have been trained on this project, the number increases to 461. These brigadistas have in turn trained 4,769 mothers in at least one intervention. Also trained have been teachers, students, and MINSA staff.

By means of qualitative interviews, the evaluation team found that the project has been very successful in the use of its participatory training methodology and **that** relations with the community are excellent. Personnel at all levels felt that they were well-trained for carrying out their assigned roles on the project. Mothers have reported not only new knowledge but changes in practices as a result of the health education sessions which they have attended.

As the project information system is not completely functional in the majority of project communities, comparative quantitative data which can be used to measure

progress toward many project objectives will be largely unavailable until a second **30**-cluster survey is conducted next year at the end of the project.

Coordination with MINSA has recently improved, at the policy level, as evidenced by a strategy for implementing growth monitoring within MINSA base houses developed jointly with SILAIS representatives and MINSA area coordinators and a plan to begin a written **referral/counterreferral** system.

No brigadista, however, has been trained in the full package of interventions; and no training has been implemented in a portion of the originally proposed communities. The evaluation team concluded, therefore, that the original design of the project was unrealistic given the context of the project areas and the capacity of brigadistas. The interventions implemented and the beneficiary population that the project proposed to cover was very extensive, especially in Rio San Juan where the population is dispersed. The number of families per brigadista and the characteristics of the urban project areas, e.g. social instability as well as economic and political expectations of brigadistas, have resulted in difficulties in the management and evaluation of project interventions.

Following are the key recommendations of the evaluation team:

Training:

- The project should continue to use the participatory training techniques found to be so successful but provide to brigadistas the supplies and materials needed to support health education sessions with mothers.

Coordination with MINSA:

- A monthly meeting should be scheduled with health personnel of SILAIS to analyze the impact of the interventions in areas assigned to the project;
- The relationship between the brigadista and his/her MINSA counterpart, e.g. the nurse or auxiliary nurse, should be strengthened by, for example: the joint planning of health education sessions for mothers, joint planning of supervision, sharing data from the information system, and discussion of project achievements; and,
- The Child Survival Project Director should hold a meeting at the highest administrative levels of Central MINSA to investigate the obstacles in the distribution of supplies and establish a strategy for coordination.

Health Information System (HIS):

- A technician in information systems should be recruited to assume coordination of the system at the central level;
- The program should contract for a consultant or expert in information systems who can revise the technical content of the data collection forms, simplify the forms, and revise data handling procedures appropriate for the skills of volunteer brigadistas, and investigate possibilities of coordinating the HIS with that of MINSA; and,
- The project should continue to explore possibilities of integrating its information system with that of MINSA and arrive at an agreement with MINSA to do so.

General:

- In order to strengthen the volunteer team of brigadistas, implementation of interventions, progress toward objectives, and coordination with MINSA, the evaluation team recommends that the total beneficiary population be reduced from 221,563 to 123,840, distributed as follows:

Tipitapa:	from 76,410 to 46,800 (22,464 beneficiaries)
Managua:	from 93,294 to 46,800 (22,464 beneficiaries)
Rio San Juan:	from 51,527 to 30,240 (14,515 beneficiaries)

2. Introduction

2.1 Background

World Relief Corporation (WRC) has been managing the Nicaragua Child Survival VIII Project since September 30, 1992. The project is being implemented in three areas:

- Managua, District 6 (Silvia Ferrufino and Villa Venezuela Municipalities);
- Tipitapa, a primarily urban suburb of Managua; and,
- Sparsely-populated Rio San Juan, a largely rural area near the Costa Rican border which is characterized by heavy rainfall, very poor roads, and some communities accessible only by boat.

The principal counterpart organization for the project is the Nicaraguan Ministry of Health (MINSA). At the regional level, counterparts include three Directors of the Local Integrated Health Attention System (SILAIS). Due to the decentralized structure of MINSA, there are also seven municipal directors as local counterparts.

The project was initially funded by a **USAID/Washington** child survival grant for Nueva **Guinea/Chontales** and Rio San Juan (**FAO-0500-A-00-2029-03**), effective September 30, 1992, and by a separate USAID/Nicaragua mission grant for the Tipitapa area (**524-0313-G-SS-3002-00**), effective November 11, 1992. On June 11, 1993, USAID approved a site change from Nueva Guinea to Managua District 6. The change was required because of an inability to adequately coordinate efforts with counterparts in the originally proposed working area. On May 3, 1994, the entire project became fully-supported by the mission with Amendment 1 to the above-referenced mission grant. It is scheduled to end on September 29, 1995.

From July 19 to August 5, 1994, a Mid-Term Evaluation of the Nicaragua Child Survival VIII Project took place to assess the accomplishments and management of the project thus far and to make recommendations to improve the project in its remaining year.

The USAID/Nicaragua mission recommended that the Bureau for Food and Humanitarian Assistance/Office of Private and Voluntary Cooperation (**FHA/PVC**) guidelines be used for the evaluation. (As guidelines for Child Survival VIII projects had not yet been issued when the evaluation began, 1993 guidelines for Child Survival VII three-year projects were used.) Results are reported here according to **FHA/PVC** guidelines.

2.2 Team Composition

The core evaluation team was comprised of:

- two external evaluators: one consultant and one member of the USAID-supported Project Management Unit of the PVO Co-Financing Project managed by Development Associates;
- the WRC Child Survival Director; and,
- key members of the World Relief Nicaragua (WRN) Child Survival Project **staff**.

Health promoters joined the core team to assist with interviewing, conducting focus groups, and analyzing data. Jairo Campos, former Coordinator for Tipitapa, and Kevin Sanderson, Country Director, also shared their insights with the evaluation team as needed.

The team members were:

Dr. **Alberto** Araica, Child Survival Program Director
Dr. Nancy Cano, Regional Coordinator, Rio San Juan
Dr. Muriel Elmer, Child Survival Director WRC
Dr. Ilka Esquivel, Health Specialist, Development Associates
Ms. Aminta Ferrufino, Education Specialist
Dr. Zorayda Gomez, Regional Coordinator, Tipitapa
Ms. Corina Rodriguez, Regional Coordinator, Managua Dist. 6
Ms. La Rue K. Seims, External Consultant and Team Leader

The external consultant and team leader was responsible for writing the final report.

2.3 Methodology

In initial meetings, members of the evaluation team reviewed the Scope of Work for the evaluation (see Appendix A), extracted data on indicators from surveys and other reports, and identified relevant documents to be reviewed (Appendix B). Also identified were the persons, or categories of persons, who had been influential in the design, implementation, or evaluation of the project and those who would affect its effectiveness and eventual sustainability. The schedule and plan for field visits was determined, as reported in Appendix D.

The team prepared general guides for field interviews, focus groups, and discussions to analyze and synthesize the information collected. From the general guides, questions were adapted for the cultural and educational background of interviewees. When necessary, additional questions were asked, especially neutral probing questions. (See Appendix C for the general guides developed.)

The evaluation team divided into three groups for field interviews. The composition of each changed daily in a deliberate attempt to give external evaluators as much contact as possible with all other members of the evaluation team and all project areas.

For three and a half days, teams conducted in-depth, qualitative interviews and focus groups in Managua, District 6, and Tipitapa. During each interview, answers to each question were recorded by at least two team members on separate pieces of paper, along with information on the category of person being interviewed, place, date, and name of the recorder. After interviews were completed, all answers to each question were grouped together. Two days were spent developing summaries of each set of answers on flipcharts and discussing the data.

Responses to focus group questions were recorded separately for each question and each focus group participant. The responses were later organized on flipcharts in a matrix with responses to each question in columns and for each participant in rows. Conclusions were drawn as reported in Appendix F.

During the final evaluation week, additional data were collected from mothers on exclusive breastfeeding practices.

In Rio San Juan, interviews and focus groups were conducted in two days, and data were summarized and discussed in one additional day, using the same procedure and same interviewers as in Managua and Tipitapa.

Those interviewed, apart from members of the core evaluation team, are included in Appendix E. Their numbers and positions are as follows:

<u>Number</u>	<u>Position</u>
2	Municipal Area Director of MINSA
2	Directors of SILAIS
2	Central MINSA
9	Barrio Doctors/Nurses/Auxiliary Nurses
1	Director of Health Education, MINSA
23	Promoters
23	Brigadistas/Block Representatives
1	Teachers
6	Pastors
30	Mothers
2	Non-Governmental Organizations
1	Health Educator, World Relief
2	Donor representatives
<hr/> 104	Total

In addition, 66 mothers and 21 brigadistas participated in focus groups.

Additional meetings of the evaluation team were held to discuss lessons learned and recommendations. The key findings, recommendations, and lessons learned were shared with representatives from **USAID/Nicaragua** and Development Associates.

3. Accomplishments and Progress toward Goals

The current Grant Agreement has three output indicators, as follows:

39 health promoters trained
468 brigadistas trained
231 community health committees (**CHCs**) functioning

WORLD RELIEF CORPORATION/NICARAGUA
Child Survival
Participants in Training Courses

Category	Place of work	Part. Meth.							
		GM	EPI	CDD	FP	NUT.	IV	TAT	A R T
Mothers	Managua	614	938	781	0	638	898	0	0
	Tipitapa	0	458	2,574	0	12	743	0	0
	Río San Juan	1,257	1,082	821	888	1,142	954	510	0
Brigadistas	Managua	0	36	36	0	0	11	0	0
	Tipitapa	0	80	12	0	0	65	0	10
	Río San Juan	80	61	61	80	80	67	67	0
Promoters	Managua	16	16	16	16	13	13	6	0
	Tipitapa	12	8	13	0	12	12	7	13
	Río San Juan	23	23	23	12	12	6	11	0
Students	Managua	29	0	0	0	0	0	0	0
	Tipitapa	0	35	51	0	0	0	0	0
	Río San Juan	358	358	0	0	358	0	0	0
Teachers	Managua	0	406	294	24	0	73	43	0
	Tipitapa	20	25	10	0	0	172	0	1
	Río San Juan	50	50	50	50	50	50	0	0
Church Volunteers	Managua	0	15	15	0	0	15	0	0
	Tipitapa	0	9	12	0	0	62	0	2
	Río San Juan	0	0	0	0	0	0	0	0
Health Commission	Managua	0	0	0	0	0	0	0	0
	Tipitapa	0	0	7	0	0	0	0	0
	Río San Juan	58	58	58	58	58	58	0	0
Church Members	Managua	0	250	210	35	0	35	0	0
	Tipitapa	0	55	10	0	0	350	0	0
	Río San Juan	0	0	0	0	0	0	0	0
NSSBI Promoters	Managua	0	0	0	0	0	0	0	0
	Tipitapa	81	0	0	0	81	81	0	0
	Río San Juan	0	0	0	0	0	0	0	0
Base House Vol.	Managua	0	0	0	0	0	0	0	0
	Tipitapa	0	0	0	0	0	0	0	0
	Río San Juan	26	0	0	0	26	0	0	0
MINSA Personnel	Managua	0	0	0	0	0	0	0	39
	Tipitapa	0	0	0	0	0	8	0	10
	Río San Juan	0	0	0	0	0	0	0	38
Total		2,624	3,963	5,054	1,163	2,482	3,673	644	113

Project training outputs can be seen in the following table by category of person trained and by region:

The original project goal was to train 39 promoters. A total of 36 trained promoters are currently on staff. As can be seen in the table, promoters have been trained in most interventions. Exceptions are, no promoter has yet been trained in family planning in Tipitapa. Half of the promoters in Rio San Juan have not been trained in Vitamin A, and about half of promoters in Managua have not been trained in **ARIs**. The proposed malaria intervention has not yet been implemented in any area, although it is scheduled to be implemented in Rio San Juan, where the problem is greatest, in November.

Of the 468 brigadistas originally proposed for the project, a total of 273 have been trained in at least one intervention and are still currently working on the project. If one were to include, however, volunteers working for local **NGOs**, and MINSA volunteers working in base houses, all of whom have been trained on this project, the number increases to 461. These brigadistas have in turn trained 4,769 mothers in at least one intervention.

The original proposal was to train 2,808 block representatives. This has not been done. The original strategy of training block representatives to work with each brigadista was not found to be feasible. Instead, each brigadista is training mothers directly. Looking at all project interventions except malaria, from 510 to 1,257 mothers have been trained in Rio San Juan, depending upon the theme. Training has taken place for five interventions in Managua and four in Tipitapa, up to 2,574 mothers in control of diarrhea in Tipitapa, and 938 mothers in the Expanded Program on Immunization (EPI) in Managua. For all project areas together, at least 4,769 mothers have been trained in at least one theme.

In addition to training promoters, brigadistas, and mothers, as originally proposed in the DIP, teachers, students, religious **leaders/brigadistas**, Health Commission members, NGO staff, base house volunteers, and MINSA staff have been trained.

As can be seen in the table, progress toward training objectives is far behind in Managua and Tipitapa. This is largely due to the change in project areas from Nueva **Guinea/Chontales** to Managua District 6 and Tipitapa. (See Section 2.1.) Most training to date has taken place in Rio San Juan where the project has been implemented more-or-less on schedule.

At the time of the Mid-Term Evaluation, output measures were not being routinely cumulated and tracked at the central WRN office. Area Coordinators had to tabulate the data during the evaluation.

Compared to the final goal of 231 community health committees functioning, there are 53 community “locales de salud” in Rio San Juan, and seven “comisiones de salud” in Tipitapa.

Objectives and Outputs Child Survival Project

World Relief Nicaragua

Objectives and Outputs

#	INDICATOR	TIPITAPA						MANAGUA DB						RIO SAN JUAN					
		% Baseline	Obj. Year 1	Actual Year 1	Obj. Year 2	2do Trim.	Obj. Year 3	% Baseline	Obj. Year 1	Actual Year 1	Obj. Year 2	2do Trim.	Obj. Year 3	% Baseline	Obj. Year 1	Actual Year 1	Obj. Year 2	2do Trim.	Obj. Year 3
01	Children 12-23 months with complete immunization coverage before age one.	13.6%	55%	22.0%	55%	20.5%	70%	51.8%	55%	26.4%	65%	26.4%	70%	37.5%	45%	41.3%	52%	39.0%	60%
02	Children 12-23 months immunized with BCG.	23.3%	55%	51.7%	55%	48.0%	70%	75.0%	55%	54.1%	65%	54.1%	70%	56.7%	45%	78.5%	52%	72.8%	60%
03	Children 12-23 months immunized with DPT3	26.2%	55%	34.5%	55%	32.0%	70%	61.6%	55%	30.7%	65%	30.7%	70%	52.9%	45%	60.2%	52%	49.6%	60%
04	Children 12-23 months immunized with Antipolio3	28.2%	55%	33.2%	55%	30.8%	70%	67.9%	55%	31.8%	65%	31.8%	70%	54.8%	45%	60.5%	52%	50.5%	60%
05	Children 12-23 months immunized against measles	35.9%	55%	27.6%	55%	25.6%	70%	63.4%	55%	26.4%	65%	26.4%	70%	50%	45%	51.5%	52%	77.5%	60%
06	Women 15-49 immunized with two doses of TT	22%	60%	N.A.	55%		70%	25.3%	60%	N.A.	65%	N.A.	70%	11.2%	50%	37.2%	55%	53.5%	60%
07	Mothers of children 0-23 months who administer ORT when their children had diarrhea.	46%	50%	49.2%	50%	49.2%	65%	37%	50%	N.A.	60%	N.A.	65%	27.9%	30%	95%	40%	70.2%	50%
08	Mothers of children 0-23 months that know the signs of dehydration.	10%	40%	N.A.	50%	N.A.	60%	16%	40%	N.A.	50%	N.A.	60%	17.1%	35%	N.A.	55%	N.A.	70%
09	Children 12-23 months weighed 6 or more times in a year.	25%	30%	N.A.	40%	N.A.	45%	17%	30%	N.A.	40%	N.A.	45%	49%	55%	N.A.	65%	N.A.	70%
10	Children 0-23 months who attend growth monitoring sessions and show adequate weight gain during the last 6 months.	25%	30%	N.A.	40%	N.A.	45%	N.A.	30%	N.A.	40%	N.A.	45%	N.A.	55%	N.A.	65%	N.A.	70%
11	Mothers of children under 2 who exclusively breastfeed them until the 4th month.	2%	5%	N.A.	10%	N.A.	15%	2%	5%	N.A.	10%	N.A.	15%	12%	15%	N.A.	20%	N.A.	25%
12	Mothers of children under 2 who know to introduce appropriate weaning foods from the fourth to sixth month.	24%	40%	N.A.	50%	N.A.	60%	22%	40%	N.A.	50%	N.A.	60%	28%	35%	N.A.	55%	N.A.	70%
13	Children 6-59 months who received a Vitamin A supplement in the last 6 months.	N.A.	40%	N.A.	50%	N.A.	60%	N.A.	40%	N.A.	60%	N.A.	60%	N.A.	55%	62%	65%	68.6%	70%
14	Mothers of children under 2 who know to give Vit. A rich foods to their children.	22%	40%	N.A.	50%	N.A.	60%	21%	40%	N.A.	50%	N.A.	60%	30%	40%	N.A.	55%	N.A.	70%
15	Post-partum mothers who receive a Vit. A supplement once in the first two months after delivery.	N.A.	70%	N.A.	80%	N.A.	90%	N.A.	70%	N.A.	80%	N.A.	90%	N.A.	70%	163	80%	67.2%	90%
16	Mothers of children 0-23 months with rapid respiration who went to a health center.	37%	50%	N.A.	50%	N.A.	65%	50%	50%	N.A.	60%	N.A.	65%	50%	50%	100%	60%	45.4%	75%
17	Mothers of children 0-23 months who recognize the signs of pneumonia.	46%	50%	N.A.	50%	N.A.	65%	47%	50%	N.A.	60%	N.A.	65%	50%	55%	N.A.	65%	N.A.	70%
18	Primigravidae who receive their first prenatal care visit in the 1st trim. of pregnancy.	N.A.	35%	N.A.	40%	N.A.	50%	N.A.	35%	N.A.	40%	N.A.	50%	N.A.	65%	52%	70%	31.7%	75%
19	Mothers of children 0-23 months who use a modern method of family planning.	46%	50%	N.A.	55%	N.A.	60%	54%	50%	N.A.	55%	N.A.	60%	37%	37%	N.A.	40%	N.A.	45%
20	Mothers of children under 2 who use at least 1 method of malaria prevention.	51%	55%	N.A.	50%	N.A.	65%	52%	55%	N.A.	60%	N.A.	65%	75%	75%	N.A.	80%	N.A.	85%
21	Health promoters trained.		7	7	6	7	0		7	7	6	7	0		7	7	3	7	0
22	Brigadistas trained.		14	42	19	42	6		14	42	19	42	6		42	42	54	42	12
23	Community Health Committees functioning.		7	7	13	7	13		7	7	13	7	13		7	42	10	42	
24	Teachers trained.		0	0	40		45		0	143		250	0		0		0	0	0
25	Mothers Groups Trained		0	42	35		36		0	42	265		9		42		66	42	17

The following table shows objectives and outputs by indicator.

Three baseline 30-cluster surveys were conducted in year one of the project, one in Managua, Tipitapa, and Rio San Juan; and objectives were adjusted for each area depending upon the baseline found for each indicator.

Since the baseline survey, information has been collected in the routine HIS, as displayed in the table. The HIS to support project management, however, is largely not completely functioning in the majority of project communities. In Rio San Juan where the project was first implemented and the information system is seen to be working best, it was estimated by the WRC Child Survival Director that data are available for only about 29 percent of the communities in which the project is working. The data in the table, therefore, pertain only to those few communities in which the data collection system is working and should not be seen to be representative of the project communities. In fact, it would be expected that the project interventions have greater impact in those few communities where data are being reported.

Of the Rio San Juan communities for which data are available, first year goals for immunization were surpassed for most antigens, and 41 percent were fully-immunized, compared to the objective of 45 percent. The proportion of women vaccinated with at least two doses of tetanus toxoid was 37 percent, compared to a baseline of 11 percent and a first year objective of 50 percent. The percent of mothers who administer ORT when their child has diarrhea was 95 percent. All children with rapid breathing were reported to have been taken to a health facility, and half reportedly received prenatal care in the first trimester. Data for other indicators are unavailable, except for the number of Vitamin A capsules distributed (623 to children and 163 to mothers post-partum).

Data for communities in Managua and Tipitapa are even more incomplete. As only part of many communities in these areas is being covered, the data which are available cannot be seen as representative of even those project areas where some data are being reported. Comparing those data which are available with the first year objective, progress in reaching objectives is far behind with the exception of BCG vaccination and ORT use in Tipitapa.

Comparative quantitative data which can be used to measure progress toward most of the project objectives will be largely unavailable until a second 30-round of cluster surveys is conducted next year at the end of the project.

MINSa managerial and service delivery personnel were asked whether they felt that sufficient progress was being made toward WRN/MINSa goals. Although morbidity and mortality data were not available at the local level to support their conclusions, health center directors overwhelmingly felt that the project was helping MINSa in reaching joint goals. One director of a health center estimated that the number of cases of ARI in the area had diminished 50 percent from 1993 to 1994 and that cases of diarrhea were no longer presenting at the center; children were being

appropriate treated with ORT at home by their mothers. Also noted was an increase of 20 percent in the number of pregnant women coming to one health center for prenatal care, partially due to referrals from brigadistas trained by WRN.

One top MINSA health administrator in Rio San Juan felt that sufficient progress was being made in urban areas but not yet in rural areas. He felt that progress had been made in immunization and in Vitamin A, and that the initial census conducted by the brigadistas had been very useful. He also felt that the brigadistas would be able to work effectively with auxiliary nurses after the project ended due to progress in coordination. Another administrator thought that there had been progress but that MINSA should promote the project more. Only one doctor interviewed in a rural area stated that he had not been able to feel an impact.

Mothers interviewed reported changes in practices as a result of the health education sessions attended. Changes reported by mothers included keeping children clean, practicing family planning, vaccinating children, improving family nutrition, boiling baby bottles, preparing ORS, use of Vitamin-A rich foods, and better use of the family food budget to buy more nutritious foods.

WRN staff felt that the effectiveness of the project was being improved by strengthening health education, community organization, and coordination with MINSA and non-governmental organizations (NGOs).

To date, the total beneficiary population covered is 21,000 in **Tipitapa**, 12,250 in Managua, and 11,753 in Rio San Juan.

Findings and conclusions:

- a Much progress has been made toward training goals, especially in light of the late start in two of the three project areas. A total of 461 volunteer brigadistas have been trained and 4,769 mothers have received health education; and,
- The HIS is not functioning to a point which would allow for optimal project management or for an assessment of progress toward objectives.

Recommendation:

- Progress toward meeting objectives will need to be considered after the final KPC survey to be conducted next year.

4. Relevance to Child Survival Problems

4.1 Major Causes of Morbidity/Mortality

MINSa staff interviewed in all three project areas felt that acute respiratory infections (ARI) and diarrhea¹ diseases were the health problems contributing most to mortality and morbidity in their areas. As previously reported in the Detailed Implementation Plan (DIP), the mortality rates for ARI for children under 1 in the three project areas ranged from 3.0 to 4.1. In Villa Venezuela Municipality in Managua, District 6, **ARIs** accounted for 62 percent of the illnesses in children under 5 reported to MINSa in 1991. In February 1993, the baseline survey conducted by WRN showed a two-week prevalence for diarrhea of 15 percent in Managua, 21 percent in Tipitapa, and 26 percent in Rio San Juan, although prevalence would be expected to be even higher during the rainy season. A recent report issued by MINSa indicates that the number of cases of both **ARIs** and diarrhea¹ diseases reportedly increased at the national level by about 25 percent from 1992-93.

Perinatal problems were also mentioned frequently in Rio San Juan as a major contributor to morbidity. Less frequently mentioned as causes of morbidity were skin disorders in all three project areas as well as measles in **Managua/Tipitapa** and malaria and neonatal problems in Rio San Juan.

4.2 Interventions and Health Promotion Activities Initiated

The child survival interventions, as contained in the DIP, were immunization, diarrhea¹ disease control, nutritional improvement, Vitamin A, growth monitoring, maternal health (including birth spacing), acute lower respiratory infections (ALRI) and pneumonia, and malaria.

Of the interventions planned, training in malaria has not yet been implemented in any of the project areas. Training in maternal health and family planning has not been implemented in Tipitapa, and although promoters have been trained in diarrhea disease control in all project areas, mothers have not yet been trained in Tipitapa.

Although a few brigadistas are weighing children in two communities in Rio San Juan, growth monitoring has not been effectively implemented in any area. An implementation strategy was only recently developed in coordination with MINSa. Training is scheduled to begin in August to initiate growth monitoring activities in one pilot community in each geographic area: Primavera in Managua, La Bocana in Tipitapa, and Los Sabalos in Rio San Juan. Weighing and referral of at-risk cases identified will take place within MINSa base houses.

In interviews with nurses in MINSa health facilities in Managua and Tipitapa and health administrators in Rio San Juan, the areas in which interventions had been

implemented were all well-recognized. In **Managua/Tipitapa**, breastfeeding and Vitamin A were often mentioned as separate interventions, apart from nutritional improvement.

The major health promotion activity initiated in all three project areas, as identified by project staff, documents, and interviews with MINSA staff was the training of brigadistas, MINSA personnel, and teachers by promoters, and subsequently of mothers and block representatives by promoters and brigadistas, using participatory methods. WRN staff felt that the formation of health commissions in Tipitapa and the training of MINSA personnel in **Managua/Tipitapa** were particularly important activities initiated.

With regard to the strategy used in implementing health promotion activities, a portion of the brigadistas recruited through 14 churches in Tipitapa have been found to be hesitant to go outside their churches to educate mothers, according to the Child Survival Project Manager. As it is the policy of WRC to serve the larger community, WRC has endorsed a plan to have the Tipitapa Area Coordinator actively work to ensure that brigadistas recruited through the church also serve the whole community.

MINSA staff in all three project areas were aware that case referral, usually verbal, had been initiated as an important health promotion activity. The referral of high-risk cases was a basic strategy from the initial design of the project. MINSA Regional Area Directors, two in Managua, one in Tipitapa, and four in Rio San Juan, have all recently agreed to a formal **referral/counterreferral** system using written forms. Training in the new system has taken place in Los Sabalos in Rio San Juan, and the forms are being printed. The plan is to implement the **referral/counterreferral** system on a pilot basis first in the same three communities where the growth monitoring intervention is being tested.

4.3 Appropriate Mix, Focus, and Prioritization of Interventions

The mix of project interventions was designed to address the major causes of morbidity/mortality in each project area as well as to support the goals and norms developed by MINSA. MINSA personnel interviewed in Managua, Tipitapa, and Rio San Juan were all in agreement that the mix was both appropriate and consistent with MINSA goals. In Rio San Juan, the initiation of family gardens was seen as important in strengthening the nutrition intervention.

In all project areas, MINSA staff found the largely preventative focus and the prioritization of project activities to be appropriate. The priority interventions were seen to be ARI and diarrhea¹ disease control in all projects areas with family planning also seen to be high priority in Rio San Juan. The priority promotion activities were seen to be the training of brigadistas and helping mothers to identify their own problems with the use of participatory techniques, which were well-received within the community. At the

request of MINSA, 113 MINSA staff were trained in participatory techniques (see previous table).

MINSA personnel in **Managua/Tipitapa** pointed out, however, that they expected the project to remain flexible enough to support special campaigns, such as those initiated during cholera epidemics. Project staff agree that the support of special campaigns is important in coordinating with MINSA.

Staff members felt that a priority intervention yet to be formally implemented is malaria in Rio San Juan, scheduled for November.

Findings and conclusions:

- The major causes of mortality/morbidity were identified as diarrhea and ARIs;
- The mix of interventions and their prioritization is appropriate to address key problems for the target population groups and is consistent with MINSA goals and norms; and,
- The preventive focus of the project is felt to be appropriate by both project staff and MINSA staff.

5. Effectiveness in Reaching High-Risk Groups

The WRN strategy for reaching individuals in high-risk groups is to identify them through the information system, make home visits, and motivate them to visit a health facility.

All persons interviewed in all three project areas, including managerial project staff, promoters, and MINSA service delivery staff, felt that the project had been effective in identifying high-risk cases through the information system and in making house-to-house visits to channel them to MINSA services. They also felt that Vitamin A distribution decreased those at risk.

Interviewees in **Managua/Tipitapa** felt that the project had been particularly successful in reaching pregnant women at risk, children with diarrhea, and malnourished children. In Rio San Juan, the brigadistas felt that pregnant women **at-risk** were being reached successfully. Nurses felt that identification of those of high-risk through home visits and channelling them into services was best for malnourished children and for those seeking family planning.

In Managua/Tipitapa, nurses at all levels pointed out an increase in demand for services from high-risk cases. The increased demand was seen to be partially due to referrals from brigadistas trained by WRN. It was noted that patients who come for services are better oriented. They know that they are high-risk and why. The better orientation of the population has contributed to the channeling of persons at-risk into services.

In Rio San Juan, MINSA administrative personnel felt that WRN-trained brigadistas supplemented the efforts of MINSA personnel. Some auxiliary nurses reported that they work together with the brigadista in identifying high-risk cases.

Numerous obstacles in reaching high-risk populations were identified in **Managua/Tipitapa** by the various groups interviewed, including:

Promoters. Managua/Tipitapa

- Few human resources;
- A lack of supplies for health education;
- Lack of a growth monitoring intervention;
- Lack of effective coordination; and,
- Lack of incentives for brigadistas.

MINSA Personnel. Managua/Tipitapa

- A short time to develop the program;
- Lack of experience on the part of MINSA in working with brigadistas recruited through schools and churches;
- Lack of supplies for health education; and,
- Lack of initial credibility of WRN in the community.

WRN Child Survival Staff. Managua/Tipitapa

- MINSA services difficult to obtain in some marginal neighborhoods;
- Lack of a written **referral/counterreferral** system;
- Lack of support from some MINSA staff;

- Lack of feedback to MINSA at some levels;
- Lack of medicines (e.g. antibiotics) and supplies [oral rehydration salt (ORS) packets, and contraceptives; and,
- a Lack of prioritization among the high-risk groups.

Promoters. Rio San Juan

- Delay in developing a strategy, in coordination with MINSA, for weighing children.

MINSA Personnel. Rio San Juan

- Health facilities geographically, and also somewhat culturally, inaccessible to high-risk populations;
- Lack of a formal **referral/counterreferral** system;
- The need for greater promotion of WRN activities by MINSA;
- An increase in malaria requiring staff time which could be used for other activities;
- Difficulties in the HIS and in its coordination with MINSA;
- Shortages of family planning methods, antibiotics, and sometimes vaccines; and,
- Inability of MINSA to supply technical materials.

Findings and conclusions:

- The project is reaching the high-risk groups targeted, but there are numerous obstacles.

6. Relevance to Development

Child survival staff and MINSA personnel interviewed in all three project areas felt that the project is fostering an environment which increases community self-reliance and is better enabling mothers to address the health and nutrition needs of their families through the training of brigadistas and the teaching of basic health messages. Brigadistas and mothers are acquiring new basic health knowledge. Forming Health

Commissions within the communities, with brigadistas, representatives from MINSA, and other community leaders, also increases self-reliance.

Both MINSA staff and promoters in **Managua/Tipitapa** felt that the project is also increasing the ability of families to better address their own needs by educating fathers, teachers, school children, and pastors in addition to mothers and brigadistas. In Rio San Juan, MINSA personnel interviewed felt that mothers were becoming more self-reliant as they became better-oriented about how and when to use health services. Also mentioned was the increased ability of families to eat nutritious foods through the use of family gardens. Promoters, in addition, felt that the community was being **helped** to become more self-reliant by the training of nurses and auxiliaries within MINSA.

Mothers were asked in what ways the health talks were helping them to care for their families. In Managua/Tipitapa, mothers noted that they had changed their practices by completing the vaccinations recommended for their children and by practicing better nutrition, including supplementing their diets with food from family gardens and taking Vitamin A. They also mentioned that the project had helped them learn about family planning methods. In Rio San Juan, mothers frequently mentioned that the project had helped them to space births, to prepare nutritious foods, and to take Vitamin A. Also mentioned was the ability to prevent disease and to prepare oral rehydration solution (ORS) as well as the importance of breastfeeding, hygiene, and cleanliness of the household.

Incentives to promote the participation of mothers in the program in all three project areas included training and health education using participative methods, counselling of mothers, food demonstrations, special celebrations and promotional activities, distribution of Vitamin A, house-to-house visits to invite mothers to participate and, especially in Rio San Juan, family planning referrals to MINSA and PROFAMILIA and support to family/community gardens (providing seeds and tools and organizing collectives) .

Those interviewed felt that the main community barriers to meeting the basic needs of children would continue to be economic: high unemployment and absolute poverty. Possible strategies to help to alleviate poverty could include popular pharmacies, the sale of oral contraceptives and condoms, and the establishment of community banks.

Findings and conclusions:

The ability of the community to better address their own health and nutrition needs is being increased through:

- transmitting knowledge of basic preventative and curative health practices which will enable mothers and family members to engage in more healthful practices;
- changing behavior which will improve nutrition and decrease morbidity and mortality, especially of young children and pregnant women; and,
- organizing the community to better respond to their own needs.

7. Design and Implementation

There are numerous aspects of the project design and implementation strategy which are having positive and negative effects on meeting project objectives.

The Child Survival Project Director has identified the positive effects as follows:

- a Participative methodology used in training and health education sessions has been very successful in reaching both the community and counterpart personnel. It has helped to strengthen relationships among promoters, brigadistas, and MINSA personnel. A total of 113 MINSA personnel have attended training workshops delivered by the project in participatory methodology;
- The integration of schools, churches, popular feeding sites ("**comedores infantiles**") and other community organizations as permanent training centers has helped to increase the number of mothers trained;
- Plans to implement growth monitoring within base houses of MINSA and to use the base house as a point of referral should positively impact the project not only in identifying a large cadre of children at nutritional risk but also as an area of greater coordination with MINSA;
- The recent agreement reached with MINSA to implement a formal referral and counterreferral system should positively impact the project;
- The strategy of using community gardens as a center to teach mothers and for cooking demonstrations has strengthened the nutrition intervention; and,
- In November 1993, a consultancy took place to reflect on the evolution of the project and to try to identify the principle obstacles and to define some strategies or alternatives in order to overcome the obstacles. A product of

this reflection of the WRN team was a better understanding of the objectives, the training strategies, and the indicators in the HIS.

The negative effects were identified by the Child Survival Project Director as:

- The number of interventions and size of the beneficiary population was too great, especially given the problems of accessibility in Rio San Juan. This has presented difficulties in training, followup, and evaluation;
- The schedule of implementing interventions has had to be adjusted due to the diverse phases of information collection (KPC, DIP, HIS) which have required a considerable investment of time and effort. The information collected has not been used in an optimal manner;
- The design of the HIS was very ambitious given the human resources available and the technical capability of data collections. The HIS has been principally for the monitoring of project indicators. This has not allowed for sustainable training and for feedback of information to the community;
- Although MINSA-endorsed Road to Health cards and other data collection forms were reviewed and indicators were discussed with MINSA representatives, there was a lack of a specific strategy in the design of the project to integrate the data collection system with that of MINSA; and,
- The health education sessions have sometimes created a demand for services with limited availability.

7.1 Design

The number of interventions implemented and planned to be implemented as well as the size of the beneficiary population that the project proposes to cover is very extensive, especially in Rio San Juan, where the population is dispersed and accessibility is difficult. The number of families per volunteer brigadista **87/1** in Managua, **82/1** in Tipitapa, and **56/1** in Rio San Juan is too great. It should be noted that the issue of the design problem was brought to the attention of **USAID/Nicaragua** early in the project, but WRN reportedly received no response. (Reference letter of July 19, 1993, from Kevin Sanderson, Country Director, to Gary Kinney, Contracts officer.)

Difficulties in the design have been compounded by the initial change of project area resulting in a delay in moving into Tipitapa and Managua, District 6. These urban areas contain problems not present in the rural areas where the project was first proposed. Problems include social instability (e.g. frequent strikes), expectations of volunteer brigadistas for greater incentives, and political polarization.

The project is behind, both in the training schedule and in the expansion into new communities. No brigadista has yet been trained in the full package of interventions.

Findings and conclusions:

- a The evaluation team concludes that the original design of the project was unrealistic given the context of the project areas and the capacity of community brigadistas. This has resulted in difficulties in the management of the project and in progressing toward objectives.

Recommendation:

- In order to strengthen the use of volunteer brigadistas, implementation of interventions, progress toward objectives, and coordination with MINSA, the evaluation team recommends that the total beneficiary population be reduced from 221,563 to 123,840, distributed as follows:

Tipitapa:	from 76,410 to 46,800 (22,464 beneficiaries)
Managua:	from 93,294 to 46,800 (22,464 beneficiaries)
Rio San Juan:	from 51,527 to 30,240 (14,515 beneficiaries)

Justification:

WRN is not currently working in any of the communities in which the team recommends the population be dropped.

As can be seen in the following table, this would allow the project to strengthen work in existing communities in Tipitapa and expand slightly in Rio San Juan. In Managua, where new promoters have recently been recruited and trained, the project population would expand by about 83 percent.

WORLD RELIEF NICARAGUA

Child Survival Program

MTE Recommendation for the Beneficiary Population

BENEFICIARY CHANGE TABLE

Area	DIP	MTE Recommendation	Current Coverage
TIPITAPA			
Total Population	76,410	46,800	
Beneficiary Population		22,464	21,000
MANAGUA Dist. 6			
Total Population	93,960	46,800	
Beneficiary Population		22,464	12,250
RIO SAN JUAN			
Total Population	51,527	30,240	
Beneficiary Population		14,515	11,753
USAID Cost/Beneficiary			
	\$2.73	\$4.95	

The overall cost to USAID per beneficiary would increase from U.S. \$2.73 to U.S. \$4.95. In comparison with four other child survival projects in Nicaragua executed between 1990-94, the USAID cost per beneficiary ranged from \$16.51 for Project Concern International to \$6.26 for Project HOPE. The average USAID cost per beneficiary for other projects surveyed include \$11.99 for ADRA and \$10.90 for Save the Children, per the following table:

NGO	Cost per Beneficiary	No. Interventions	Cost/ Intervention¹ Beneficiary
ADRA	\$11.99* 5.67	- 5	- 1.13
Project Concern	16.51** 10.00	- 6	- 1.66
Project Hope	6.26	5	1.25
Save the Children	10.90	7	1.55
WRN	2.73	8	\$0.34

* FY 1990-93 Project.

** FY 1991-94 Project.

Note: Costs displayed in the table pertain only to A.I.D. funds. The 25 percent NGO contribution is not included. For total cost, multiply each cost by 1.25 percent.

With the reduction in population recommended in this evaluation, the cost/beneficiary would be \$4.95.

At present, management systems, especially the HIS, are not in place to support project expansion.

7.2 Management and Use of Data

Those interviewed, including brigadistas, promoters, and key staff members all felt that the data being collected in the information system were useful. Promoters felt that the system of collecting information house-to-house was adequate. Many also felt, however, that the data collection instruments were too numerous, repetitious, confusing, and difficult to fill out. As the information system is perceived as too difficult, most brigadistas are not reporting data, and progress toward indicators cannot therefore be

tracked. The information system is not functional in many communities. Promoters in **Managua/Tipitapa** stated that the brigadistas appeared to understand the information system during training but that **later**, when working on their own, the brigadistas found the forms to be difficult to understand and did not want to fill them out. **Many** of the brigadistas are not well-educated, and a few **are** not literate.

Promoters in all three areas found that brigadistas had the most problems in filling out the form "Registro de Mujeres de 15 a 49 **Años**" or "Registration Form Women 15 to 49 Years." Brigadistas, for example, had particular problems in calculating the date on which pregnant women were due to deliver, and they felt **that** some of the questions on the form were unnecessarily personal. Promoters suggested **that** this form in particular be simplified. Some of the **data** on the form are not being used and, therefore, should not be collected. The amount of space allowed for recording data **was** also seen to be insufficient.

Other suggestions from promoters included reducing the total number of data collection instruments, recording all information for one family on one form, and asking brigadistas to report data more frequently. Brigadistas themselves also mentioned that data could be reported more frequently so that they would not have to record so much data on one form.

Staff agreed that any changes should be made in coordination with MINSA. MINSA personnel also requested that the project information system be consistent with theirs.

Staff recommend that changes be pretested with a sample of brigadistas before a new, simplified data collection system is implemented throughout the project area.

Problems were identified in all three project areas with regard to feedback of **data** in the information system to counterparts and the community. Although top **SILAIS** staff **and** some MINSA **Area Directors** remembered receiving project data, MINSA personnel **at** other levels, including clinic directors, doctors, and nurses were generally not receiving any information. In addition, due to high turnover within top administrative positions in MINSA, some persons in key positions were not aware of data having been shared, and a few were even unaware of project activities.

In an attempt to determine if they were effectively receiving feedback from the information system, mothers were also asked if the brigadista had shared with them information on how many children in the community had been vaccinated or how many mothers had been trained to use ORT. No mother interviewed was aware of either in Rio San Juan although promoters who attended health education sessions had heard this information being shared by the brigadista. Some mothers interviewed in Managua and Tipitapa reported that information had been shared with them.

Findings and conclusions:

- a The information system is very complex and difficult to understand with regard to both the recording and analysis of data for the brigadistas and some promoters. The "Registro de Mujeres de 15 a 49 **Años**" presents special difficulties in recording information and contains data which are not being utilized;
- a The information system is not fully functional in many areas to support optimal project management;
- a The project has defined and is carrying out a system of information independently of MINSA. MINSA officials are not in agreement with this practice as it results in two different measures of indicators. They have suggested that the two systems should be integrated; and,
- a Information is not being effectively shared with the community.

Recommendations:

- a A technician in information systems should be recruited to assume coordination of the system at the central level;
- a The program should contract for a consultant or expert in information systems who can revise the technical content of the data collection forms and data handling procedures appropriate for the skills of volunteer brigadistas, and investigate possibilities of coordinating the HIS with that of MINSA;
- a A community information system should be implemented whereby each brigadista is trained to give feedback to her/his community using easily understood visual aids;
- a Monthly meetings should be scheduled with health personnel of SILAIS to analyze the impact of the interventions in areas assigned to the project; and,
- a A recommendation of the Country Director is to continue to investigate new possibilities and arrive at an agreement with MINSA, perhaps with the help of a consultant, to integrate the information systems. The HIS consultant (see Section 7.9) had previously recommended that criteria be unified "with MINSA and other pertinent NGOs in order to standardize the operational definitions, indicators of analysis, collection and reporting instruments, etc."

7.3 Community Education and Social Promotion

7.3.1 Balance of Project Activities

The balance of project activities is felt by the evaluation team to be appropriate given the objectives and goals. The project is almost entirely health promotion. Social mobilization activities are primarily limited to assisting MINSA during health fairs three times a year. Interpersonal communication in the direct counseling of mothers in house-to-house visits is an important component of the project, but **mass** media methods are almost never used. In addition, during the last year, basic health messages were given by radio two times from a station in San Carlos, Rio San Juan. There are no direct services with the exception of Vitamin A provision.

7.3.2 Link between Health Education and Services

Problems were identified in all three project areas during the interviews with the link between health education and available services. To some extent, services are being promoted on the project to which the community does not have easy **access**. In **Managua/Tipitapa**, mothers interviewed frequently mentioned that nearby MINSA facilities only gave prescriptions without medicine. Mothers, brigadistas, promoters, and MINSA personnel all reported shortages of medicines and supplies in Rio San Juan.

Most MINSA facilities visited stated that they generally had ORS **packets** available. As the project also teaches home mix and rehydration using locally-available and acceptable cereal-based solutions, the occasional lack of ORS packets in some MINSA facilities should have little impact on the effectiveness of the diarrhea¹ control intervention. There are also occasional shortages of vaccines, especially mentioned by MINSA personnel was a shortage of BCG. Probably more serious in terms of probable impact on the project, however, are serious limitations of contraceptives and antibiotics for the treatment of pneumonia or other **ARIs** within MINSA facilities. Some facilities reported that they never have antibiotics and that if the mother could not afford to buy them retail in a local pharmacy, they must refer to a higher-level facility.

In Rio San Juan, the project is minimizing the impact of insufficient contraceptive supply upon the project by referring women to PROFAMILIA. The project **is** currently conducting an informal study of health facilities in its working areas prior to discussing with MINSA the supply problems being faced.

In addition to shortages of supplies and medicines, some mothers interviewed reported problems with accessibility. A recent World Bank study found that in many rural **areas**, community members commonly travel one hour in each direction to reach the nearest health facility.

7.3.3 Development of Health Education Messages

Mothers in all project areas were interviewed in-depth prior to the development of health education messages. They were asked if the messages were easy to understand, easy to remember, comprehensive, easily transmitted, culturally-acceptable, and how they might be improved. The messages were revised after the interviews. Finally messages were reviewed by MINSA personnel, including the Directors of Health Posts in the project area.

Information from the baseline knowledge, practice, and coverage (KPC) survey was also used in formulating messages, for example, in identifying locally-acceptable foods rich in Vitamin A.

Information continues to be collected using qualitative methods in order to improve health education messages and increase the impact of the program. During this Mid-Term evaluation, for example, focus groups and in-depth interviews were held to investigate mothers' feeding practices while her child has diarrhea and mothers' feelings toward breastfeeding and weaning. The lack of exclusive breastfeeding has been identified as a problem in surveys conducted by MINSA as well as by WRN staff. Reasons for the use of supplemental foods prior to six months were explored. (See Appendix F for a list of conclusions from the focus groups with mothers.)

The project staff have ensured that health education messages are consistent with those of MINSA by careful review of MINSA norms and guidelines and by the development of training materials and curricula in coordination with MINSA. Staff ensure that brigadistas are delivering messages in a consistent and accurate manner through close supervision by promoters using a supervisory checklist. MINSA personnel frequently attend health education sessions which also ensures the consistency of messages.

7.3.4 Training Methodology

A strength of the project mentioned frequently during interviews with MINSA personnel, brigadistas, and mothers, as well as project staff, is the successful use of participatory training and health education methods. Participatory methods are used throughout the project by WRN staff, and the brigadistas are trained in its use also. During supervisory visits, promoters reinforce and give feedback to brigadistas regarding the dynamics of the session and their ability to involve mothers as well as on the content of the session and the accuracy and completeness of basic messages.

The following guide is used in training promoters in participatory techniques:

ALFORJA, ***Técnicas Participativos para la Educacion Popular***, Centro de Estudios y Publicaciones ALFORJA, Tomo 1, 8th ed., San Jose, Costa Rica, 1989.

Other non-traditional techniques are also being used in training, such as role plays and sociodrama.

The external evaluator had an opportunity to observe first-hand the participatory techniques being used in the project to generate interest in addition to hearing many testimonials regarding its successful use.

The knowledge and message transmission skills of brigadistas is formally assessed by the use of supervisory checklists. Promoters informally assess mother's knowledge during health education sessions. In interviews, MINSA staff frequently reported that mothers seeking services were better informed.

Findings and conclusions:

- a** The project as been appropriately emphasized health promotion;
- a** The lack of medicines and supplies, especially antibiotics and contraceptives, in some MINSA service delivery facilities **may** negatively impact upon the effectiveness of health education activities;
- Health education messages were tested extensively with mothers and are consistent with MINSA norms; and,
- a** A well-recognized strength of the project is the use of participatory training and health education techniques.

Recommendations:

- a** The Child Survival Project Director should hold a meeting at the highest administrative levels of Central MINSA to investigate the obstacles in the distribution of supplies and establish a strategy for coordination;
- The Office of Population of **USAID/Nicaragua** should be contacted to investigate possibilities of increasing contraceptive supply for project activities; and,
- Alternatively, the possibility of popular pharmacies with financing outside the project should be studied.

7.4 Human Resources for Child Survival

A total of 43 paid staff are working on the project in-country, including 36 promoters, three coordinators, **two** regional administrators, one health educator, and the Project Director. The number of promoters per brigadista (1/12) is not considered to be sufficient, especially in Rio San Juan. The evaluation team, therefore, is proposing a decrease in the beneficiary population but without a decrease in staff. (See also Sub-Section 7.1.) The mix is considered to be appropriate, except that the recent departure of the person in charge of the HIS has left a gap which needs to be filled.

A cadre of volunteer brigadistas has been trained, including 273 brigadistas supervised by the project. The dropout rate, as reported in the first annual report, is fairly high: 67 percent in Tipitapa and 26 percent in Managua. Including volunteers working for local NGOs and MINSA volunteers working in base houses, a total of 461 were trained.

The problems of volunteer dropouts on the project was explored in focus groups during this evaluation. Reasons mentioned for why a brigadista would dropout included illness, lack of incentives, lack of training, lack of supervision, lack of incentives, and other work. (See Appendix F for a list of focus group conclusions.) This issue could be explored further in in-depth interviews with brigadistas who have already dropped out.

All brigadistas supervised by the project are multi-purpose workers. All brigadistas give health talks, collect information, conduct a census of their community, and make house-to-house visits. Exceptions are brigadistas recruited through churches, many of whom do not conduct a community census or make house-to-house visits.

Brigadistas receive **two** to three days training per month in only one intervention. During the month, they have an opportunity to give a health talk supervised by the promoter during which time he/she receives feedback on the accuracy of transmitting messages, the completeness of messages, and the techniques of transmission. Supervisory checklists are used. There is also a monthly meeting of brigadistas. Volunteer brigadistas are generally not overworked in terms of their training responsibilities and give only one talk per month.

The MINSA counterpart of the brigadista is generally the nurse or nurse auxiliary, although doctors are also sometimes closely involved. Some brigadistas work hand-in-hand with his/her counterpart; others have contact primarily with the project promoter.

The training methodology and length of training was seen to be appropriate by most of the brigadistas interviewed for the tasks which they are asked to do. A large minority of the brigadistas, however, said that the training period was not sufficient because they wanted to learn more about more topics. In the experience of the training

team, however, whenever brigadistas are trained in-depth, they tend to give too much detail to the mothers which confuses her, and the basic messages get lost

When asked if they felt that brigadistas were trained adequately and for an appropriate length of time, some promoters suggested that some topics, such as immunization and maternal health, were too extensive and should be subdivided.

Findings and conclusions:

- The number of staff, given the scope of the proposed project and population to be covered, are insufficient;
- a The mix of staff is generally appropriate, but a specialist in HIS is needed;
- a The training given to brigadistas was generally found to be appropriate; and,
- a The safety of staff working on the project could be improved.

Recommendations:

- The beneficiary population should be reduced;
- A specialist in HIS should be recruited;
- More time should be dedicated to the selection of brigadistas, including better application of the selection criteria and placing emphasis on work expectations;
- a Seat belts should be installed in all seats in project vehicles where passengers normally ride, and the driver of the vehicle should ensure that they are used; and,
- a Life vests should be provided onboard in sufficient numbers for staff traveling in small boats to project sites in the Rio San Juan area.

7.5 Supplies and Materials for Local Staff

Five training manuals, developed by Project HOPE and used by WR in Honduras, were revised and adapted for use on the project in coordination with MINSA, as follows:

**Control de Enfermedades Diarreicas
Infecciones Respiratorias Agudas
Nutrition
Planificacion Familiar
Programa Ampliado de Inmunizaciones**

These were printed for use in March, 1993. The messages contained in the manuals are the same as those used in training brigadistas. Thus, they were tested as previously described (see Section 7.3). The manuals were reviewed by members of the evaluation team, including the external evaluator, and found to contain internally consistent messages.

Both promoters and brigadistas interviewed consistently stated that materials were easy to understand, useful, well-illustrated, and appropriate for their needs. There has been evidence of the use of the materials in health education sessions and in interviews. Some brigadistas in Tipitapa, however, complained that they had not yet received the manuals even though they had completed training in the relevant topic. Some promoters are waiting to see if brigadistas dropout before giving them training manuals.

Other materials given include forms used in the HIS and minimal supplies for delivering health education talks, e.g. markers, pencils, crayons, notebooks, flipchart paper, erasers, masking tape, etc. Some brigadistas interviewed, especially in Tipitapa, stated that the materials provided were insufficient to support quality health education sessions.

No written materials are distributed to community members, apart from training materials provided to the brigadistas.

Both brigadistas and promoters frequently mentioned the lack of adequate supplies for health education sessions as decreasing the effectiveness of the work of brigadistas.

Findings and conclusions:

- Messages used in training materials are internally consistent and consistent with MINSA norms;
- a Training manuals were found to be adequate;
- a Supplies for use during health education sessions were often reported to be insufficient to support quality health education sessions; and,
- a Some brigadistas are not receiving training materials in a timely manner.

Recommendations:

- At the end of training for each theme, each volunteer brigadista should receive the corresponding manual. Within the present budget, if necessary, more manuals should be purchased to compensate for any loss due to dropouts; and,
- The project should provide to volunteer brigadista the supplies and materials needed to support health education sessions.

7.6 Quality

Both brigadistas, and the promoters who supervise them, in all three project areas found that brigadistas have both the technical knowledge and skills needed to carry out their responsibilities. Their knowledge of basic messages, as well as their skills in using the participatory teaching techniques promoted by the project, is tested by the use of supervisory checklists. The checklists were reviewed by the external evaluator and were found to be adequate to ensure the quality of health talks.

Brigadistas were found to be correctly transmitting the basic messages which have been taught to them. Problems were encountered with the educational level of some brigadistas, especially in Tipitapa. Some brigadistas do not know how to read even though they are community leaders. Generally, however, brigadistas were found to have the capacity and sufficient training to teach mothers.

Mothers interviewed felt that they had been appropriately counselled. They reported new knowledge and improved practices as a result of counselling from the brigadista. New knowledge mentioned includes household cleanliness, reasons for vaccination, methods of diarrhea control, reasons for prenatal care, that breastfeeding can prevent diseases, appropriate weaning foods, and not to self-medicate. New skills include how to prepare ORS and how to prepare foods rich in Vitamin A.

Nurses in Managua and Tipitapa reported that brigadistas speak to mothers clearly and simply, and doctors reported that brigadistas had been seen to counsel appropriately during home visits. Promoters also found that brigadistas spoke clearly to the community. Brigadistas are taught to express interest in each mother's child during home visits which improves receptivity to counselling.

Findings and conclusions:

- Brigadistas were found to have the knowledge and skills necessary to carry out their work; and,
- Brigadistas were found to appropriately counsel mothers.

7.7 Supervision and Monitoring

It has been the project strategy for the promoter to attend each monthly talk given by the brigadista, at least until the brigadista has been trained in all project interventions over a period of approximately one year. A set of six supervisory checklists in the interventions implemented are used on the project to assess if brigadistas are transmitting messages correctly, completely, and using participatory techniques.

In addition to the use of checklists during health talks, promoters report that they supervise and monitor the activities of brigadistas by means of reports, monthly meetings to plan activities, and field visits. They both help and support the volunteer brigadista with a focus on human relations.

Promoters are supervised by a coordinator working in each of the three project areas. Each coordinator has an office in her project area. Tipitapa also has an assistant coordinator. Area coordinators frequently attend health talks given by brigadistas along with promoters.

Area coordinators are supervised by the Child Survival Director who holds frequent meetings and regularly travels to the field.

Staff at each level feel that supervision has been adequate for assuring the quality of health education sessions delivered. Brigadistas interviewed in Managua and Tipitapa report that the promoter is felt to be a real help in keeping them informed, answering mother's questions, coordinating activities, and giving feedback to the community. When asked their opinion of the visits of the promoter, brigadistas commented that the visits helped them improve their work, motivated them, and helped them to keep informed. In Rio San Juan, brigadistas reported that they felt that the promoter backed up their work, effectively coordinated activities, and explained their work. They found the promoter's visit to be helpful, especially in answering difficult questions asked by mothers.

The director and area coordinators, however, feel that more assistance and supervision may be needed with regard to the information system.

Findings and conclusions:

- Staff at each level feel that supervision has been adequate for assuring the quality of health education sessions delivered;
- Promoters attend every health talk given during a long period of training for each brigadista; and,

- Brigadistas report that supervisory visits of the promoters are helpful and improve the quality of their work.

Recommendation:

- A plan for decreasing supervision of the brigadista by the promoter needs to be developed in order to improve prospects for sustainability.

7.8 Use of Central Funding

A total of \$14,016 USAID funding has been assigned for administrative monitoring and technical support of the project from WRC. these funds have been critical for the technical support of the project and this function is not overfunded.

Administrative monitoring and technical support from World Relief's central office has been appropriate in terms of timing, frequency, and needs of the field staff. The Child Survival Administrative Coordinator made two trips to the field during Year 1 to train the staff and assist them in doing 30-cluster baseline surveys in Managua, Tipitapa, and Rio San Juan. The Child Survival Director made two trips to the field to assist the staff in the development of the HIS and for monitoring purposes during Year 2.

The central office administrative and technical functions have allowed WRN to share experiences and lessons learned from other WR child survival projects.

Finding and conclusion:

- Administrative monitoring and technical support from WRC has been appropriate.

7.9 Use of Technical Support

Technical support thus far on the project has included:

- An external HIS consultant to discuss information needs and design the project HIS system;
- The WR Honduras Child Survival Project Director to train promoters in conducting the baseline survey;
- Visits of home office staff, as previously discussed. (See Section 7.8.);

- A local consultant to discuss project strategies and objectives and to conduct a small survey, largely of vaccination coverage, in a few communiti

The evaluation team found the visits of the home office team, WR Honduras Project Director, and the HIS consultant to be helpful. The HIS consultant recommended in his report that the HIS be pilot tested ‘Yo verify the feasibility and utility of instruments and proposed methods’ and make adjustments as necessary. This has yet to be done.

A local consultant was contracted for two activities:

- clarification of objectives; and,
- a small survey to obtain quantitative data to be used to measure progress toward objectives and to aid in making management decisions.

The consultant was seen to be helpful in clarifying project objectives by many who attended his workshop, although his approach was generally seen to be too academic and time consuming.

Recognizing the need for quantitative data at mid-term in order to assess progress toward indicators aside from training outputs, WRN contracted for a survey to obtain data on the EPI and ORT indicators being tracked by the project HIS. The small survey conducted, unfortunately, did not produce data useful for comparisons with baseline data. The lack of appropriate use of established random- or cluster-sampling techniques precluded both the calculation of a confidence interval for the data obtained and the generalizability of the data obtained outside the immediate area surveyed. Instead, a “judgement sample” had been used whereby an attempt was made to classify communities into three strata using socioeconomic, demographic, and other social indicators data. The usefulness of this type of sampling strategy was not explained in the consultants report. Furthermore, there was a lack of an objective, composite index score used to classify communities, and data were not stratified in the analysis.

In addition, a major change in the methodology used to extract information from the vaccination cards of those surveyed rendered the data inappropriate for comparison to baseline. Apparently a large proportion of the entries on the Road to Health Card for immunizations received were recorded by MINSA vaccinators as a check mark. During the initial baseline survey, only vaccinations recorded with a date were accepted. During the subsequent survey conducted by the local consultant, checks or other marks were accepted in addition to vaccinations recorded with a date. This change in methodology made a meaningful comparison impossible.

An external consultant is needed at this time to review the data collection instruments and data collection procedures in order to simplify them and improve data collection, and investigate possibilities of coordinating the HIS with that of MINSA.

Finding and conclusion:

- External technical assistance has generally been appropriate; and,
- An HIS consultant is needed at this time.

Recommendation:

- An external consultant should be contracted to review and revise the HIS data collection forms and data collection system, make recommendations to improve reporting by brigadistas, and investigate possibilities of coordinating the HIS with that of MINSA.

7.10 Assessment of Counterpart Relationships

The major counterparts include MINSA, the Ministry of Education, PROFAMILIA, evangelical churches, and INSSBI. Other counterparts mentioned by those interviewed include: Action ‘Ya,’ Ixchen, Capri, Soynica, CIPRES, the Mayor’s Office, JCOPS, and GTZ.

The major counterpart, by far, is MINSA. Activities carried out in coordination with MINSA have included training of volunteers in base houses, workshops on participatory methodology for doctors and nurses, assistance in vaccination and other special campaigns, and the training of mothers presenting at the local Medical Post for services.

Strengthening coordination and relationships at the local level will be key to the sustainability of this project. In some areas, the brigadista is working hand-in-hand with the nurse or auxiliary nurse in some areas. In others, the project is not being closely coordinated.

The project has defined and is carrying out a system of information independently of MINSA. MINSA officials are not in agreement with this practice as it results in two different measures of indicators. They have suggested that the two systems should be integrated. (See also Section 7.2.)

Coordination with MINSA has recently improved, at the policy level, as evidenced by:

- a strategy for implementing growth monitoring within MINSA base houses developed jointly with SILAIS representatives and MINSA area coordinators;
- a plan to begin a written **referral/counterreferral**; and,
- a strategy for training professional personnel of MINSA for the purpose of ensuring the management and sustainability of the project activities once the project ends.

Still, more could be done to better coordinate the project and improve sustainability.

The project has coordinated with the Ministry of Education in training teachers and students in the package of child survival interventions as well as in the training of parents of school children. Health education sessions have been directed toward the beneficiary population of Capri and Action ‘Ya,’ both community bank projects and Ixchen, a family planning project. Health talks are held during the activities of each organization.

With regard to INSSBI, promoters and brigadistas have trained mothers who attend child feeding centers with their malnourished children and have demonstrated the preparation of nutritious foods. INSSBI also has a community garden at the feeding center from which food has been used for the demonstrations.

In Rio San Juan, those seeking family planning services are often referred to PROFAMILIA. This referral relationship is especially important since MINSA facilities frequently do not have contraceptives available. (See also Section 6 and 7.3.2.)

Within evangelical churches, church members have been trained as brigadistas. A total of 52 have been trained in Tipitapa.

Findings and conclusions:

- Coordination with MINSA needs to be strengthened; and,
- The close working relationship and coordination between the brigadista and the nurse or auxiliary nurse observed in some areas is an essential element for the sustainability of the project.

Recommendations:

- The project should continue to investigate new possibilities and arrive at an agreement with MINSA, perhaps with the help of a consultant, to integrate the information systems;
- It is necessary to strengthen the relationship between the brigadista and local MINSA counterparts, for example, by the joint planning of health education sessions for mothers, joint planning of supervision, sharing **data** from the information system, and discussion of project achievements;
- a The project should coordinate with the EPI to guarantee the vaccine supply to MINSA facilities to support WRN promotional activities; and,
- a Promoters should analyze and share data from the project HIS with each doctor or other MINSA personnel responsible for working in his/her communities.

7.11 Referral Relationships

As the project has only been implemented south of Potreros in Rio San Juan, some of the referral sites identified in the DIP are outside the communities in which the project is working. Within the project communities, mothers can be referred to 1 hospital, 4 health centers, and 15 health posts. In addition, family planning clients are referred to PROFAMILIA in Rio San Juan.

Referral sites for Managua District 6 and Tipitapa are identical to those identified in the DIP.

Most mothers interviewed in Managua and Tipitapa found referral sites to be geographically accessible. Some families in Rio San Juan, however, experienced difficulties in securing transportation to facilities.

Many brigadistas are referring mothers to MINSA facilities, although there has been no written referral system to date. The project has recently reached an agreement with MINSA to begin a formal **referral/counterreferral** system in all project areas, and the forms are currently being printed. Plans have been made to strengthen referral relationships with MINSA by implementing growth monitoring with MINSA base houses (See Section 7.10 for a full discussion of plans to strengthen the referral relationship with MINSA through improved coordination and for recommendations in this area.)

Other referral sites mentioned by those interviewed included pharmacies, base houses, and midwives.

Some problems have been identified with the quality of services offered by MINSA, especially with regard to the lack of medicines and supplies. These problems, with recommendations, have been described elsewhere in this report. (See Section 7.3.) Other problems with the quality of care offered mentioned by mothers interviewed including a long waiting time for “mala” services, doctors who arrive late and leave early, and a poor attitude on the part of MINSA personnel.

7.12 PVO/NGO Networking

At the headquarters level, lessons learned on each project are formally shared with WRC projects in other countries on an annual basis. Home office staff also frequently network with other PVOs in conferences.

At the local level, project staff maintain contact with and share lessons learned with **PVOs/NGOs** in the project area, including non-health organizations working in development.

Finding and conclusion:

- Networking is taking place at both headquarters and local levels.

7.13 Budget Management

The grant expenditures as of June 30, 1994 were U.S. \$671,246. Funds remaining for the second half of the project are \$567,877. The total budget is 13 percent underspent. For the two largest line items, salaries and benefits are 12 percent underspent, and indirect costs are 15 percent under the amount budgeted. (See Appendix G for budget, budget variance report, and pipeline analysis.)

With the recommended reduction in population, WRN staff predict that they will be able to achieve the original project objectives within the original budget.

Findings and conclusions:

- The program goals set for the budget were too ambitious; and,
 - a Achieving project objectives within the original budget is unlikely unless there is a reduction in beneficiary population.

8. Sustainability

8.1 Coordination with MINSA and Local Institutions

As few local private institutions **are** located within the project **areas**, **the** only counterpart important to the sustainability of the project is MINSA, except for Tipitapa where local institutions, especially churches and Health Commissions play a strong roll in the project. Apart from MINSA, the Ministry of Education could sustain activities somewhat within the schools, and evangelical churches could help sustain activities within the Tipitapa area.

Ways of improving coordination with MINSA have been described exhaustively elsewhere in this report, **and** specific recommendations have been made. To summarize, coordination needs to be improved at all levels, but particularly the relationship between the brigadista and local counterparts at Health Posts and Medical Posts needs to be strengthened. The strategy of implementing the growth monitoring intervention within base houses is **a** strong step toward strengthening this relationship.

In some areas, the brigadista already coordinates her work with personnel from the local Health Post. Good coordination has especially been reported between brigadistas and promoters **and** the nurse auxiliary. Coordination includes referring children and mothers, coordinating home visits, and working together during vaccination and community cleanup **campaigns**. **Some** nurses stated that they assist the promoter in formulating a monthly training plan for brigadistas and help to recruit brigadistas for the program. **In some areas**, the auxiliary participates in training workshops for brigadistas.

Other steps important for sustainability mentioned by promoters and MINSA personnel interviewed include:

- a **The organization of more** commissions of health;
- a Family gardens;
- The use of participatory training methodology;
- a Recruiting and training more brigadistas; and,
- Training MINSA personnel, including refresher training.

Brigadistas stated that education materials and moral support were important in ensuring that the project would continue.

In addition, the information system should be better integrated, and feedback from the information needs to be improved at all levels. (See also Section 7.2 and 7.10.)

At the end of the project, expectations that MINSA can take over recurrent costs of the program, such as costs for training and training materials, are minimal. Some MINSA personnel interviewed stated that willingness was present but not the budget (See also Section 9.). Interviewees stated that MINSA would not be able to support education materials or supplies or assume any incentives for brigadistas. MINSA should be able to take over much of the supervision of brigadistas, although field supervision will not be nearly as intensive.

Recommendations for coordination with MINSA are included in Section 7.10.

Aside from sustainability at an institutional level, the evaluation team considers the project to be sustainable at an individual level. That is, the new knowledge and changes in health practices of mothers, students, teachers, and other community members, as a result of the health education sessions, will continue long after the project ends.

8.2 Incentives for Brigadistas

Incentives mentioned by brigadistas interviewed in all three project areas include:

- a Educational materials and supplies;
- Meetings with other brigadistas;
- Caps, T-shirts, etc.
- Food and refreshments in training events;
- a Diplomas at the end of training which help to give confidence;
- a Supervision; and,
- a Newly acquired knowledge.

Brigadistas stated that they would continue working as long as they continued to learn and community members were interested in learning.

8.3 Community Involvement

The major way in which the community expresses its interest in the work of the brigadista is by attending health education sessions. According to promoters, brigadistas, and mothers, mothers are most interested in sessions on diarrhea, Vitamin A, and in Rio San Juan, family planning. The teaching methodology used ensures that mothers actively participate during sessions.

Mothers also assist the brigadista and support his/her work by working in community gardens, providing training sites.

9. Recurrent Costs and Cost Recovery Mechanisms

Given **WRN's** experience in implementing this grant which was underbudgeted given the intended beneficiary population, project managers now have a better understanding of the human, material, and financial inputs required to sustain effective child survival activities. Estimated recurrent costs to maintain the project after external funding has stopped are estimated to be \$34 per year per beneficiary for training and \$14 per year for materials.

The community has not agreed to pay for any part of the costs of preventive and promotive health activities. Mothers interviewed stated that they would be unwilling to pay, and studies suggest that the poor are also unable to pay. During the **1980s**, the Gross Domestic Product (GDP) fell from **U.S.\$850** to \$400, and inflation reached 33,000 percent in 1988. A recent World Bank report suggests that community members experience difficulties in paying even for curative care. After a survey conducted in 1993, the World Bank concluded that the low utilization of health services, both public and private, results from cost and lack of access. Although absolute levels of health care expenditures have not been found to be high, poor adults pay 12-13 percent of the monthly poverty line for health care for each episode of illness.

The Living Standards Measurement Survey recently examined the demand for curative health care and prospects for cost recovery within MINSA. It was found that those of lower income were very sensitive to changes in the price for medical care and that as price increased they tended to self-treat and self-medicate, often inappropriately. The study concluded that only those of higher income would be able to pay more.

The project has no specific cost-recovery mechanisms, and the evaluation team does not recommend that such mechanisms be implemented given the unwillingness and inability of the community to pay. The implementation of popular pharmacies in some areas to compensate for the lack of supplies and medicines within MINSA may be explored with funding outside the project (see Section 7).

The costs were found to be reasonable by the evaluation team given the environment. The project is particularly costly to implement in the Rio San Juan area where transportation is difficult. The cost per beneficiary is the second lowest in Latin America among Child Survival VIII grant recipients and is probably insufficient to effectively implement all the interventions proposed.

MINSa has not committed at present to assuming recurrent costs, although some doctors, nurses, and auxiliary nurses actively support project activities. Since 1980, public expenditures for health care have decreased. The Government of Nicaragua is unable to adequately fund MINSa, and some facilities cannot be properly staffed. Recurrent costs unlikely to be sustainable include intensive training and very intensive field supervision.

The external evaluator does not find a consideration of cost containment to be appropriate on the project at this time.

Findings and conclusions:

- Community members are seen to be unwilling as well as unable to pay for preventative and promotive activities; and,
- MINSa has not committed to assuming recurrent costs of the project and is seen to be unable to do so.

10. Recommendations of Interviewees to Improve the Project

Interviewees, including MINSa personnel, WRN promoters, WRN executive staff, mothers, brigadistas, and others were asked how the project could be improved.

In **Managua/Tipitapa**, promoters and brigadistas had the following suggestions:

- Better coordinate with MINSa;
- Teach more recipes with green vegetables to improve the nutritional status of children;
- Provide more incentives to brigadistas, such as caps and T-shirts;
- Simplify the HIS;
- a Provide more education materials and supplies;
- Create sources of income generation to improve the economic situation;

- Recruit more brigadistas; and,
- Train MINSA personnel in human resources to improve the quality of service delivery.

Mothers in **Managua/Tipitapa** suggested the following:

- Have an incentive, such as a “pinata,” at the beginning of each health talk;
- Coordinate better with Health Posts and base houses; and,
- Provide medicines.

In Rio San Juan, brigadistas felt that the project could be improved through:

- Better training;
- Providing medicines, more vitamins, and family planning methods;
- Giving publicity to the project;
- Teaching natural medicine;
- Providing a large “Road to Health Card” for teaching purposes;
- Providing equipment for midwives, including boots and raincoats;
- Providing more education materials and supplies; and,
- Promoting more family gardens.

MINSA felt that the project could be improved through:

- Better coordination;
 - Better communication;
 - Planning work together;
 - Giving MINSA and the community feedback from the information system;
- 8 Training more brigadistas; and,
- Continuing community gardens.

Finding and conclusion:

- Those interviewed had many diverse suggestions for improving the project which were taken into account in developing the key recommendations.

11. Key Findings and Recommendations of the Evaluation Team

Following are the key findings and recommendations of the evaluation team:

1. Some brigadistas are not receiving training materials in a timely manner. Due to the high dropout rate among brigadistas, some promoters are withholding the basic set of five training manuals until months after the brigadista is trained. This practice has resulted in some discontent and has affected their work.

Recommendations:

- More time should be dedicated to the selection of brigadistas, including better application of the selection criteria and placing emphasis on work expectations; and,
 - At the end of training for each theme, each volunteer brigadista should receive the corresponding manual. Within the present budget, if necessary, more manuals should be purchased to compensate for any loss due to dropouts.
2. Both brigadistas and promoters frequently mentioned the lack of adequate supplies for health education sessions as decreasing the effectiveness of the work of brigadistas.

Recommendation:

- The project should provide to volunteer brigadistas the supplies and materials needed to support health education sessions.
3. Coordination with MINSA has recently improved, at the policy level, as evidenced by:
 - A strategy for implementing growth monitoring within MINSA base houses developed jointly with SILAIS representatives and MINSA area coordinators;
 - A plan to begin a written **referral/counterreferral** system; and,

- A strategy for training professional personnel of MINSA for the purpose of ensuring the management and sustainability of the project activities once the project ends.

Still, more could be done to better **coordinate** the project and improve sustainability.

Recommendations:

- The project should continue to investigate new possibilities and arrive at an agreement with MINSA, perhaps with the help of a consultant, to integrate the information systems.
 - Promoters should analyze and share data from the project HIS with each doctor responsible for working in his/her communities; and,
 - A monthly meeting should be scheduled with health personnel of SILAIS to analyze the impact of the interventions in areas assigned to the project.
4. The close working relationship and coordination between the brigadista and the nurse or auxiliary nurse observed in some areas is an essential element for the sustainability of the project.

At the local level, the brigadista is working hand-in-hand with the nurse or auxiliary nurse in some areas.

Recommendation:

- It is necessary to strengthen the local coordination with MINSA personnel which already exists in some project areas. Toward this end, it is necessary to adopt strategies, such as: joint planning of health education sessions for mothers, joint planning of supervision, sharing data from the information system, and discussion of project achievements.
5. The information system is very complex and difficult to understand with regard to both the recording and analysis of data for the brigadistas and some promoters. Emphasized as the most difficult form, "Registro de Mujeres de 15 a 49 **Años**" presents difficulties in recording information and contains data which are not utilized.

Recommendations:

- The data collection forms should be revised and simplified so that they are appropriate for the actual use of the data;

- A specialist in information systems should be recruited to assume coordination of the system at the central level of WRN; and,
 - The program should contract for a consultant or expert in information systems who can revise the technical content of the data collection forms and data handling procedures appropriate for the skills of volunteer brigadistas, make recommendations to improve reporting by brigadistas, and investigate possibilities of coordinating the HIS with that of MINSA.
6. There are frequent problems with the lack of supplies and medicines within MINSA facilities, for example, with ORS, vaccines, and especially contraceptives and antibiotics.

Recommendations:

- The Child Survival Project Director should hold a meeting at the highest administrative levels of Central MINSA to investigate the obstacles in the distribution of supplies and establish a strategy for coordination;
 - The project should contact the Office of Population of USAID/Nicaragua to investigate possibilities of increasing contraceptive supply for project activities; and,
 - The project should coordinate with the EPI to guarantee the vaccine supply to MINSA facilities to support WRN promotional activities; and,
 - Alternatively, the project should analyze the possibility of popular pharmacies with financing outside the project.
7. The original design of the project was unrealistic given the context of the project areas and the capacity of community volunteers. The interventions implemented and the beneficiary population that the project proposes to cover is very extensive, especially in Rio San Juan where the population is dispersed and with limited accessibility. The number of families per volunteer brigadista and the characteristics of the urban project areas, e.g. social instability, economic and political expectations of volunteers, have resulted in difficulties in the management and evaluation of project interventions.

Recommendation

In order to strengthen the volunteer team of brigadistas, implementation of interventions, progress toward objectives, and coordination with MINSA, the evaluation team recommends that the total beneficiary population be reduced from 221,563 to 123,840, distributed as follows:

Tipitapa:	from 76,410 to 46,600 (22,464 beneficiaries)
Managua:	from 93,294 to 46,600 (22,464 beneficiaries)
Rio San Juan:	from 51,527 to 30,240 (14,515 beneficiaries)

12. Lessons Learned

Following are the lessons learned during the first half of the project

1. Given that the original proposal budget was directed toward a rural population, it has been necessary to incorporate new strategies in order to improve community participation and provide better coverage of the beneficiaries, for example, to help or strengthen the work of the community health workers by training school teachers.
2. The identification of key ministry of health personnel, not necessarily in managerial posts, and the training of doctors and nurses who work in the neighborhoods has been fundamental to strengthening the integration of personnel in health posts with promoters and community volunteers. This has helped to motivate health personnel around a common strategy and has served also as a point of convergence for appropriate coordination and health education.
3. Due to the continued economic crisis in Nicaragua, the project has seen the necessity of providing the health volunteer with some type of incentive to continue volunteer work. Many are having to juggle full-time jobs and family responsibilities in addition to their participation in the project.
4. Training health promoters and health volunteers in rural areas in various aspects of agriculture has given them an incentive to continue their work and has facilitated the link between health and agricultural projects.
5. With the objective of taking advantage of natural organizations where mothers congregate, it is necessary for child survival projects to establish coordinating relationships with public and private institutions.
6. Staff have learned that in developing educational sessions with religious organizations, adequate coordination is important.

7. All the steps of a child survival project, including planning, implementing, and evaluation, should be defined with counterparts in order to neither duplicate nor dilute the voluntary work force and to guarantee quality results.
8. Ongoing communication with MINSA and joint visits to supervise health volunteers increases efficiency and leads to greater sustainability.
9. After the first cadre of volunteers graduated, project staff realized that maintaining unity and motivation would be a difficult task. It is necessary to organize more activities for volunteers to recognize their efforts and to motivate them. Volunteers then appreciate the great interest of directors of the ministry of health in their problems.
10. In order to strengthen the learning process for mothers and to make it more sustainable, it is necessary to give adequate and sufficient teaching supplies.
11. Strengthening complementary program interventions can improve the availability of food at the household level.
12. In educational projects, it is necessary to training counterparts (personnel in the ministry of health) in specific themes in order to transfer the program to them and to build in sustainability from the beginning. Funds should be allocated for this purpose.
13. Training ministry of health professional field staff in participatory training methodology, e.g. doctors and nurses in health posts and health centers, has provided a point of departure and motivation for both the ministry and the child survival project. At the same time, it has helped to facilitate transmission of basic messages at the community level.
14. The project should share information from the HIS with all levels in the ministry.